CHAPTER – 5
TQM AND LIBRARY SERVICE

There are few techniques: (i) flow process charts and flow diagrams; (ii) Gantt charts and arrow diagrams; (iii) networks; (iv) policy management; (v) quality function deployment (QFD). The top management does not constitute and deploy the circles. They are voluntary by nature. The management might encourage and nurse the circles. It may aid and equip them with training to enhance morale and promote improvements and group participation.

(1) Flow Process Charts and Flow Diagrams

This is a basic tool commonly used for work simplification. The first step is to critically examine the process system as a whole. Relative to the end objective kept in constant focus, each constituent element is connected to the following element till the end, and the actual process flow is charted and then evaluated for relevance, importance and contribution to the end result. Typical questions asked are: What is the precise purpose of each element? What has it accomplished? Can the process be eliminated? Does the activity, person, machine, material or process available make a better service or lower the cost?

The flowchart prepared might show the time, distance, person and place for each element, activity or process that affects the objective set forth in the project. Relative to that objective, clear-cut start and end points are decided. Data is then charted in a specific format.

It is important that actual data on elements, activities or sub-processes as they happen or happened are recorded. Often random sampling of past records can be put to use supplementary to on-line surveys, to arrive at valid data for the flow chart.
Applications
(1) To analyze library’s managerial/administrative & technological processes relative to the objectives.
(2) To rationalize and simplify library systems, command structures and planning.
(3) To guide and monitor policy control relative to quality, document delivery.

Benefit
(1) Improve quality.
(2) Prompt delivery.
(3) Lower costs, lower inventory, saving the time and improved cash-flow and service proficiency.
(4) Effective and responsive library systems.

(2) Gantt Charts and Arrow Diagrams
The Gantt chart is a graphical method for planning and controlling project and product activities and times. It is widely used in a variety of forms in libraries to detect delays against planned schedules and apply remedies to control and prevent their recurrence.

Fig 5.1: Arrow Diagram
Numbers in circles in figure shows the activities or operations. Numbers along the arrows show the duration that each circled activity or operation takes to be ready for the next one. The direction of the arrow shows the sequence.

The design prepared will help to:

1. identify critical operations, processes or activities;
2. monitor schedules and prevent hold-ups;
3. assess overall time-schedules and evaluate cost and delivery implications and;
4. plan for effective resource deployment to accomplish the targets or goals of the library.

(3) **Networks**

Network methods aid in the efficient management of various types of projects, which consist of inter-related and complex activities/operations, to accomplish specified goals. The arrow diagram in figure is a typical, simple network.

Network methods show inter-dependencies among the activities. Computers are often used for large projects in networking to assemble and sort the information provide schedule times, earliest and latest start dates for each activity. The critical activities and their assembled linkage in the sequence and durations shown in the network would give a measure of time to accomplish the end objective. This time-based path is also known as critical path (CP). The method assumes known duration, and is termed the critical path method (CPM). In programme evaluation review technique (PERT) from which the network method was developed, activity durations are estimated by the probability.

Network methods are useful for:

1. Diagnosing quality problems, wastes and non-value added activities and for planning as well as organizing improvement exercises;
2. Pinpointing bottlenecks (critical barriers) and arranging timely remedies to overcome them;
Determining, as the work progress, whether or not the delivery schedule can be accomplished as per service commitments and budgeted costs;

Reducing times and costs, and;

Achieving and maintaining better products and flow.

(4) **Policy and Management**

This is an emerging approach for goal-bound systematic breakdown and deployment of the targets and activities relative to the specific targets, to the various executive levels and the supporting resource. Issue such as quality, delivery, service and cost (profit) that affect the library and the users are taken up by the policy management. Specific policies and goals are derived which are then deployed following a protracted process and implementation secured through a library wide consensus process. ‘Owners’ are identified or problems and processes that have direct linkages with the targets and library goals, and with their teams and resources, they focus on improvement exercises to achieve time-bound results. The approach works on a participative principle.

(5) **Quality Function Deployment (QFD)**

This is also an evolving approach but largely confined to quality-specific exercises. QFD consists of a series of specific exercises to convert users requirements and specifications into appropriate technical characteristics and parameters, to enable design, technology, process, quality, and service librarians and specialists to achieve compliance with the requirements.

The exercises would typically pinpoint the product the process and the activity elements that directly affect the users requirements and enable derivation of their priorities for total control. In the process, quality planning, prevention of non-conformance at source.

TQM is “a system of continuous improvement employing participative management and centered on the needs of users”. Key components of TQM are employee involvement and training, problem-solving teams, statistical methods,
long-term and thinking, and recognition that the system, not staff, produces inefficiencies. Libraries can benefit from TQM in three ways: breaking down interdepartmental barriers; redefining the beneficiaries of library services as internal users (staff) and external users; and reaching a state of continuous improvement.

5.1 Steps
There are 14 steps that librarian in any type of organization can take to implement a total quality management program.

(1) Create constancy of purpose for improvement of product and service. Constancy of purpose requires innovation, investment in research and education, continuous improvement of product and service, maintenance of equipment, furniture and fixtures, and new aids to production.

(2) Adopt the new philosophy. Management must undergo a transformation and begin to believe in quality products and services.

(3) Cease dependence on mass inspection. Inspect products and services only enough to be able to identify ways to improve the process.

(4) End the practice of awarding business on price tag alone. The lowest priced goods are not always the highest quality; choose a supplier based on its record of improvement and then make a long-term commitment to it.

(5) Improve constantly and forever the system of product and service. Improvement is not a one-time effort; management is responsible for leading the organization into the practice of continual improvement in quality and productivity.

(6) Institute training and retraining. Workers need to know how to do their jobs correctly even if they need to learn new skills.

(7) Institute leadership. Leadership is the job of management. Librarian have the responsibility to discover the barriers that prevent staff from taking pride in what they do. The staff will know what those barriers are.
Drive our fear. People often fear reprisal if they “make waves” at work. Librarians need to create an environment where workers can express concerns with confidence.

Break down barriers between staff areas. Librarian should promote teamwork by helping staff in different areas/ departments work together. Fostering interrelationships among departments encourages higher quality decision-making.

Eliminate slogans, exhortations, and targets for the workforce. Using slogans alone, without an investigation into the processes of the workplace, can be offensive to workers because they imply that a better job could be done. Library need to learn real ways of motivating people in their organization.

Eliminate numerical quotas. Quotas impede quality more than any other working condition; they leave no room for improvement. Workers need the flexibility to give customers the level of service they need.

Remove barriers to pride of workmanship. Give workers respect and feedback about how they are doing their jobs.

Institute a vigorous program of education and retraining. With continuous improvement, job descriptions will change. As a result, employees need to be educated and retrained so they will be successful at new job responsibilities.

Take action to accomplish the transformation. Management must work as a team to carry out the previous 13 steps.

### 5.2 Service Improvement with TQM

Many libraries have implemented TQM successfully. University Library creates a task force which rewrote the library’s vision statement, and considered changes that would have to be made in order to develop a new organization culture-one that “highlights the changing nature of staff roles and responsibilities in an era of pervasive change”. With the help of consultants, Harvard learned about TQM, and found that its principles of service excellence, teamwork, ongoing training and
skill building, process/systems focus, continuous improvement, and cooperation across boundaries could help them make the changes they needed.

For instance, the Oregon State University Libraries also decided to test TQM. Two small teams, the Shelving Team from the stack maintenance unit, and the Documents Team in the government publications unit worked with outside facilitators. Each team surveyed users and staff in found that some issues, perceived as critical by staff, were not perceived as critical by users and therefore needed rethinking in terms of TQM. The Shelving Team, which wanted to address the problem of longlasting shelving backlogs, found that the shlevers, who worked alone on the floors, felt isolated and unmotivated to make progress. Using this information, the team devised a plan for shlevers to working in small groups and have an assigned floor. The result was an increased “espirit de corps”, tidier shelves and less backlog (Butcher, 1993).

A university library might use the principles of TQM to enhance library services: ---Create service brochures, Conduct a user survey about library services, Change hours of operation, Simplify checkout of materials, Use flexibility in staff assignments, Give new staff a thorough orientation, Create interdepartmental library advisory groups, Improve the physical layout of the library, Publicize new or changed services, Develop user and staff training materials, Offer electronic document delivery

5.2.1 Potential Challenges
While TQM clearly has positive aspects, implementing it can have potential challenges as well. Jurow and Barnard(1993) identify four barriers to the adoption of TQM libraries: (1) vocabulary: objections to terms such as “total”, “quality”, and “management” which improve that high standards are not already being met; (2) commitment: TQM takes several years to implement and requires a long-term commitment by library managers; (3) process: our culture tends to be impatient and we try to solve problems quickly, contrary to TQM’s careful process analysis; and (4) professionalisation: professional staff can be resistant to
turning over their practices and services to what they perceive as the “uninformed whims of the customer”. Sirkim (1993) also notes that it is not possible to satisfy everyone’s demands; choices will need to be made.

5.2.2 **Benefits of TQM in University Libraries**

If implemented carefully, quality management principles yield positive benefits libraries such as:

- Incremental changes lead to continuous improvement – quick solutions may yield only partial results.
- Forces library managers to develop leadership skills interested of replaying on power within position to obtain results.
- Increase staff participation in decision-making, thus increasing the feeling of “ownership” of decisions and directions once charted.
- Improves the level of training given to staff, thus increasing skills.
- Helps break down barriers between library departments and improves communication within the organization.
- Provides a method of improving services to users in a period to similar resources.

5.2.3 **Possibilities of TQM in University Libraries**

The rapid growth of the library-focused TQM electronic discussion lists and TQM related articles in the library professional literature illustrates the interest of Library field in TQM and its various processes. A large number of libraries are at least considering if not actually implementing, this new-user oriented, teamwork-based process for continuous quality improvement.

Let us discuss, how the quality of library operations and services will be improved by implementing TQM. For example, let us see how the quality of acquisition service can be improved by TQM. Acquisition is one of the basic activities of a library. The process of ordering and acquiring the selected materials are known as acquisition. How TQM will help in improving the quality of acquisition function?
A total quality tool ‘Flow Chart’ will considerably improve the quality of acquisition.

In any acquisition system, one has to follow the following steps, to acquire a document.

1. Receiving the suggestion for a document
2. Checking the bibliographic data with
   a. trade catalogue
   b. books in print
3. Check its availability within the library
   a. by checking the catalogue
   b. by checking with the already ordered documents list
4. Determine its cost
   a. from the standard sources
   b. from the vendors
   c. from the publishers
5. Get the invoice, if required
6. Determine whether the fund is available
   a. If the answer is yes go to step 7
   b. If the answer is not then wait till the fund is available or try to get the extra fund
7. Select the vendor
   a. based on vendor rating studies
   b. based on other methods
8. Place an order
   a. with certain conditions
   b. without any condition
   c. if there will be any advance payment then clear the payment from accounts department and enter the details in file
9. Send reminders if the document is not received in time
10. If the vendor is taking long time or unable to provide the document then cancel the order and repeat steps 7 and 8
(11) After receiving the document
   (a) check its bibliographic data
   (b) check its cost
   (c) settle the payment if it is due

(12) Enter the details in access register

The acquisition section staff member can easily understand the steps involved in the process with the help of a flow chart, drawn based on the above steps.

5.2.4 TQM Process in Practice

To which extent TQM process is in practice in libraries? The two surveys, one conducted for the LAMA Total Quality Management for Libraries Discussion Group using the TQMLIB (1994), and the other conducted by the Association of Research Library’s Office of Management Services for its SPEC kit and Flyer (1993) on Quality improvement programs in ARL libraries brings out the facts.

The fact that TQM is a recent understanding for most libraries is shown clearly in LAMA survey. Both of the surveys point out that libraries undertaking TQM are in a variety of stages and are using a wide range of approaches, and a relatively small number of libraries were actively involved in formal quality programs.

The SPEC Flyer indicates, however, that, it is clear that those who have turned to quality improvement programs have done so eagerly and with a strong sense of commitment. The fact that they recognize the value of a philosophy that emphasizes quality of service to library users first is indicated by the wide variety of library functions in which they are currently applying quality improvement techniques. The number of members adopting quality improvement programs should increase rapidly in the next few years as those members currently considering a commitment to such a program make their decisions and others hear about the success of their fellow member libraries. (ARL, 1993).
5.2.5 **Service Programmes**

Academic libraries are following different approaches in their TQM process. Some academic libraries undertaking TQM or CQI (continuous quality improvement) as a library-wide effort address established library procedures on a step-by-step basis. In some of the academic libraries they are concentrating on quality improvement in specific services only such as Reference service, Technical service and Access service.

5.2.6 **Marketing of Library Products**

According to Seddom information has become a very profitable commodity and as such, many profit-making organizations are now involved in the provision of information services and products on a scale equivalent to that being done by libraries. This phenomenon has slightly increased the number of competitors in the information market place. The emerging technological challenges and societal changes also pose an unprecedented threat to the continued survival of libraries as worthy information providers.

In the face of these challenges it is now time for libraries to exhibit that they are invaluable to the continued survival and sustenance of their organizations. This can best be done by actively marketing their services, and by means of total quality management.

The concept of marketing library and information services and products is catching on in many libraries worldwide. It has now been realized that marketing information services and products is essential for all information providers if they are to continue to exist. This is largely because information has become a very valuable resource in recent times comparable to traditional resources such as land, capital and labour. Fortunately, information is a highly marketable commodity and libraries, according to Cornish are still major sources of information provision.
Total quality management (TQM) has been defined as “a management philosophy embracing all activities through which the needs of the customer and the community, and the objectives of the organization are satisfied in the most efficient and cost effective way by maximizing the potential of all employees in a continuing drive for improvement”.

Total quality management has been the fundamental business strategy of the world’s leading organizations throughout the 1980s. In some developed countries such as Japan, the United Kingdom and the United States of America, a number of organizations have adopted TQM as a way of life for the continuous improvement of the quality of their products and services to their customers. Quality, to these organizations is the ‘totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs”.

In the context of service, quality is about putting the right service in the hands of the customer, at the right time and price. It is therefore, not surprising that these organizations have focused their products on niche markets, rather than selling standard mass-produced goods. This reaction has been the response to the fierce competition on the domestic and international business environment, technological changes, pressures to demonstrate value for money and consumer sophistication, among other. Today, we are witnesses to quality products and services from Japanese, British and American organizations.

Surprisingly however, marketing and its theories have not been widely accepted by practitioners in the information profession and its application in libraries has been extremely slow and cautious. This approach is attributed by Tanui and Kitoi to the fear of dealing with the little – known sphere of marketing which is mistakenly associated only with profit – making enterprises. It is thus often assumed that marketing is inapplicable to the services and products of a library since a library with good books, up-to-date journals and staff is an end in itself. It must however be stated that marketing is for both profit-oriented and non-profit organizations. It does not only involve a good but a service as well.
Many librarians still hold a rather myopic view that their services and products are so essential that people will use them as they have always done without any additional effort on their part. They erroneously assume that users’ needs are also satisfied because they come to use the library. Unfortunately however, although librarians may regard libraries as indispensable, it is by no means certain that those outside the profession share this view. This aversion however seems strange, since marketing like librarianship places the user at the centre of all activities. It is thus very essential that the marketing concept is wholly and quickly adopted if libraries are to continue to exist as information providers in the future. Weingard sums this up when she states that “if libraries are to survive or thrive, the complete spectrum of marketing approaches is essential to the managerial toolbox”.

A controversy over the expansion of TQM into service-oriented organizations (such as libraries) has to do with the question of profit making. Business as we all know, are designed to make profit. Libraries, unfortunately, are not profit making ventures and are considered to offer “free” service. It should be noted, however, that libraries, be they public, academic or research are not ‘free’. Customers may not be paying directly for the use of the library but are entitled to the service because their taxes, school fees, the contributions and membership subscriptions of the organizations they serve, coupled with grants of various types donated to the libraries, are good enough reasons for them to be managed efficiently. More than ever before, stakeholders are demanding accountability, value for money. And precise justification of all resources to improve the competitiveness, effectiveness and flexibility of the whole organization. Accountability is thus crucial both in the business sector in general and in the library in particular. This is yet another justification for the applicability of TQM to businesses and libraries.

Another reason why libraries should adopt TQM is that it (TQM) embodies certain values and approaches, which are common and already established
concepts in libraries. These include the elements of participative management, staff training and development and responsive service to customers. However, several of the defining and extraordinary elements of TQM such as continuous improvement, quality tools and measurement and customer-focused planning are not commonly applied in libraries. It is for these reasons that libraries are in a position to expand and improve upon principles they already value and employ, while introducing new approaches to planning, problem solving and envisioning future customer services and needs.

5.3 Service

The past decade has witnessed a remarkable spread in the use of total quality management (TQM) practices in both manufacturing and non-manufacturing firms. Intense competition in the marketplace has caused manufacturing firms to search for a competitive edge in their manufacturing operations and processes. It has been argued that the use of TQM practices has a synergistic impact on organizational performance (Schonberger, 1991). Some studies have found that the use of TQM practices reduces manufacturing process variance, eliminates reworks and scraps, and improves quality performance (see Daniel and Reitsperger (1991), Flynn et al. (1995) and Schmenner and Cook (1985). In addition, there is considerable anecdotal evidence which TQM initiatives enhance the potential for firms to improve their performance. More recently, empirical evidence suggests that there are direct and indirect relationships between the adoption of TQM practices and firms’ performance levels. Other researchers have, however, expressed reservation about the benefits of TQM practices as a feasible and cost effective initiative (Schaffer and Thomson, 1992; Naj, 1993). Moreover, some studies have found that TQM firms do not outperform non-TQM firms (Mathews, 1992; Fuchsberg, 1993). Despite this, some researchers claim that the disappointing results of TQM practices may be attributed to inadequate resources, negligence in making complimentary investments in organizational structure and human resources, and inadequate appreciation of system dynamics (Powell, 1995; Sterman et al., 1997). Other studies assert that the poor performance of many new TQM initiatives are due, in part, to the continuous
reliance on management accounting systems that fail to provide relevant information, for example, examine the factors that either encourage or inhibit accounting lag following the implementation of TQM practices. Specifically, they found that industry sectors, management commitment, organizational structure, participation, and financial performance, have an impact on accounting lag.

Banker et al. note that, “…if increased competition is the primary basis for the renewed focus on quality today, it is important to understand how the quality improvement decision of a firm is linked to its competitors’ choice of quality levels and the degree of competitive intensity between the firms”. However, the issue of how TQM initiatives are influenced by the intensity of market competition has received only scant attention in the empirical literature on management accounting. The need to address this gap in the literature arises from increasing concern over under performing TQM initiatives, and questions about the relevance of quality strategies in a highly competitive environment. Our study is motivated by the lack of empirical evidence on the impact of intensity of market competition on the relationship between the use of TQM practices and organizational performance.

5.3.1 Theoretical Development

TQM practices are management techniques involving the measurement of actual manufacturing performance against rigorous quality standards. The core ideas of TQM practices include seeking opportunities to increase customer satisfaction, striving for continuous improvement and doing things right the first time. We rely on the seminal works on TQM as the basis for our theoretical arguments. An emphasis on improving customer satisfaction and reducing costs are the two factors that provide for common ground for each of these authors’ approach to TQM. Each of them suggests that the most important TQM practice is user focus, which denotes that the primary goal of the organization is the delivery of goods and/or services to the satisfaction of its users. Deming (1982, 1986), for example, argues that doing it right the first time means less waste, less rework, and lower costs, while Ishikawa (1985) claims that total quality control reduces costs over
the long-term, not the short-term. These authors claim that the second most important TQM practices is product design, which suggests that employees must conform to the established product specifications, or changes thereof, from time to time. In this study, we focus on these two specific aspects of TQM practices.

Prior studies suggest that TQM strategy that focuses on increasing customer levels of satisfaction does have a significant and positive impact on performance. Itner and Larcker (1996), for example, suggest that attaining user satisfaction is thought to increase the profits of the organization by decreasing costs through fewer returns and increasing revenues through customer loyalty.

During the production process, the customer may request access to the quality data used in statistical process control, to evaluate the quality of the goods. Waldman and Gopalakrishnan (1996) claim that quality is, in fact, largely a customer perception based on how well the product or service meets the customers’ needs and expectations. Poor quality occurs when these needs are not met. Satisfying the customer is an important aspect of the manufacturing process and this requires the customer’s input at all stages of manufacturing. With high levels of product quality that meet customer specifications, it is much easier to keep the customer satisfied. It is suggested that gaining a better understanding of customers’ needs should have a direct impact on customer’s levels of satisfaction. In summary, the existing literature suggests that customer satisfaction has a positive impact on both market value and according returns. Thus, it can be concluded that TQM practices of customer focus are positively associated with organizational performance.

Product design is one of the most important aspects of the manufacturing process as it involves people from the entire process, including customers for product specifications, the production team for product manufacturability, marketing managers to ensure the product has a market, and purchasing managers to assure the parts are available for production. In the product design stage, customers must provide their own specifications, which the product must meet (Schonberger,
1986). With the given specifications, the product can be designed with the customer in mind. Furthermore, the design of the product must be flexible enough to allow for future changes to be easily made, so that the costly process of redesigning the product is not necessary. Before manufacturing begins, the product design must be thoroughly reviewed, ensuring that every contingency has been covered (Harrison, 1992; Forza and Flippini, 1998). Prior studies suggest that product design reduces process complexity and process variance, and improves manufacturing processes. Thus it can be concluded that TQM practices that focus on product design are positively associated with organizational performance.

Thus far, it has been argued that the use of TQM practices are likely to lead to improved organizational performance; but this is subject to one qualification that relates to the degree of intensity of market competition. Manufacturing organizations face different degrees of market competition. Contingency theory suggests that an organization must be aligned with its environment to achieve optimal performance. Market competition is a key situational factor in the total number of factors that comprise the firm’s environment. This study conceptualized market competition as consisting of price, product differentiation, product distribution and other market factors such as (1) the number of major competitors operating in the market, (2) the frequency of technological changes in the industry, (3) the frequency with which new products are introduced, (4) the extent of price cuts, (5) package deals for customers offered by competitors, and (6) changes in government regulations and policy and Mia and Clarke (1999).

With increased competition in organizations’ market places, we argue that the performance of manufacturing firms is likely to deteriorate if they fail to adopt an appropriate manufacturing strategy (such as the use of TQM practices) to deal with the competitive threats and challenges. Prior studies argued that increased market competition has led many firms to emphasize customer focus and product design services in order to enhance customer satisfaction and gain a competitive edge. Banker et al. (1996) argued that to be able to maintain old customers and to win new customers is necessary for maintaining and improving market share and
profitability. Thus, the higher the intensity of market competition, the more aggressive a business must be in discovering customer needs, and to enhance customer satisfaction. Das et al. (2000) suggest that when firms face market competition, they have to produce and market high quality products to meet customer and competitive quality standards. They further suggest that quality-related investments (i.e. TQM practices based on customer focus and product design) associated with increased market competition should result in improved products and services, which, in turn, should lead to higher levels of customer satisfaction. The quality literature found that, in general, higher levels of customer satisfaction leads to a higher levels of organizational performance.

Based on the foregoing discussions, we test the following two hypotheses: (1) the higher the degree of market competition, the more positive the relationship between TQM practices based on customer focus and organizational performance, and (2) the higher the degree of market competition, the more positive the relationship between TQM practices pertaining to product design and organizational performance. Accordingly, our hypotheses, stated in alternative forms, are shown as follows:

H1: The higher the degree of market competition, the more positive the relationship between TQM practices of customer focus and organizational performance. H2: The higher the degree of market competition, the more positive the relationship between TQM practices of product design and organizational performance.
References


